

CLAIMS

1. A breath monitoring device comprising means to record
a first breathing state of a user, and means to detect
5 a deviation from the recorded breathing state in a
subsequent use of the device by a user.
2. A breath monitoring device as claimed in claim 1
comprising a housing in which the recording means and
10 detection means are located.
3. A breath monitoring device as claimed in claim 1
wherein the means to record a first breathing state of
the user comprises means to record at least one breath
15 parameter of a user.
4. A breath monitoring device as claimed in claim 3
wherein the or each breath parameter is selected from
20 inhalation speed, exhalation speed, inhalation volume,
exhalation volume, oxygen content of exhaled breath,
carbon dioxide content of exhaled breath, time
interval between breaths, number of breaths in a
predetermined time period, duration of an exhalation,
duration of an inhalation and the rate of change of
25 any of the aforementioned parameters.
5. A breath monitoring device as claimed in claim 1
wherein the means to record a first breathing state of
a user is one or more means selected from an
30 inhalation speed sensor, an exhalation speed sensor,
an inhalation volume sensor, an exhalation volume
sensor, an inhalation duration sensor, an exhalation

duration sensor, an inhalation pressure sensor and an exhalation pressure sensor.

- 5 6. A breath monitoring device as claimed in claim 1 wherein the means to record a first breathing state of a user comprises means to record an unforced breathing state.
- 10 7. A breath monitoring device as claimed in claim 6, wherein the unforced breathing state is a resting breathing state or the breathing state of the user after physical activity or exertion.
- 15 8. A breath monitoring device as claimed in claim 1, wherein the means to detect a deviation from the first breathing state preferably comprises the means to record the first breathing state.
- 20 9. A breath monitoring device as claimed in claim 1, wherein the means to detect a deviation from the first breathing state comprises means to detect when a user other than the first user uses the device.
- 25 10. A breath monitoring device as claimed in claim 1, wherein the device further comprises means to store data obtained from the first breathing state recordal means.
- 30 11. A breath monitoring device as claimed in claim 1, wherein the data storage means comprises a machine readable medium, on which data may be stored by any suitable means.

12. A breath monitoring device as claimed in claim 11,
wherein the data storage means comprises a computer
hard disk, chip-based memory, floppy disk, compact
disc, DVD (digital versatile disc), or mini-disc.

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13. A breath monitoring device as claimed in claim 1,
wherein the device further comprises indicating means,
arranged to indicate when a deviation from the first
breathing state is detected by the deviation detection
means.

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14. A breath monitoring device as claimed in claim 13,
wherein the indicating means is a visual indicating
means, audio indicator means, or both visual and audio
indicator means.

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15. A breath monitoring device as claimed in claim 14,
wherein the indicating means is capable of displaying
the extent of the deviation of the or each breath
parameter which does not conform to the or each breath
parameter of the first breathing state.

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16. A breath monitoring device as claimed in claim 1,
comprising means to temporarily prevent operation of
the device by a user, when a deviation from the first
breathing state is detected.

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17. A breath monitoring device as claimed in claim 16,
wherein the device operation prevention means prevents
operation for a defined time period.

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18. A breath monitoring device as claimed in claim 16,
wherein the device operation prevention means

comprises a switch or trigger which is activated when the deviation detection means detects a deviation from the first breathing state.

5 19. A breath monitoring device as claimed in claim 16, wherein the device operation prevention means prevents subsequent breaths by a user from entering the device, or prevents recordal of subsequent breaths by the recordal means.

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20. A breath monitoring device as claimed in claim 1 further comprising means for a user to accept or decline a breath recordal, whether a breath is within the parameters of the first breathing state or is a
15 deviation from the first breathing state.

21. A breath monitoring device as claimed in claim 20, wherein the breath recordal acceptance means comprises a switch which in use must be activated to accept a
20 breath reading in order for the reading to be recorded by the means to record the first breathing state of a user.

22. A breath monitoring device as claimed in claim 1
25 comprising a fluid inlet, which in use is arranged to allow passage of a users breath into and out of the device.

23. A breath monitoring device as claimed in claim 22,
30 wherein the fluid inlet comprises a mouthpiece.

24. A breath monitoring device as claimed in claim 23, wherein the mouthpiece is detachably connected to the fluid inlet.

5 25. A breath monitoring device as claimed in claim 23, wherein the mouthpiece comprises a mask arranged in use to be placed over at least the mouth of a user.

26. A method of monitoring breaths, the method comprising
10 the steps of:

(a) recording the first breathing state of a person from a breath of a person; and

15 (b) detecting a deviation from the recorded first breathing state in a subsequent breath from a person.

27. A method as claimed in claim 26, wherein step (a)
20 comprises recording a first breathing state determined from a plurality of breaths from the person.

28. A method as claimed in claim 26, wherein step (a)
25 comprises monitoring at least one breath parameter of the persons breath.

29. A method as claimed in claim 28, wherein the breath
parameter is at least one parameter selected from
inhalation speed, exhalation speed, inhalation volume,
30 exhalation volume, oxygen content of exhaled breath,
carbon dioxide content of exhaled breath, time
interval between breaths, number of breaths in a
predetermined time period, duration of an exhalation,

duration of an inhalation and the rate of change of any of the aforementioned parameters.

- 5 30. A method as claimed in claim 26, wherein step (b) comprises comparing one or more subsequent breaths of a person with the first breathing state recorded from the or each breath recorded in step (a).
- 10 31. A method as claimed in claim 26, wherein there is a step between step (a) and (b) of storing data obtained from the recordal of the first breathing state of the person in step (a).
- 15 32. A method as claimed in claim 26, wherein step (b) comprises detected a deviation from the stored data.
- 20 33. A method as claimed in claim 26, wherein step (b) may comprise detecting a deviation from a subsequent breath or breaths originating from the same person as step (a), or from a different person.
- 25 34. A method as claimed in claim 33, wherein the method comprises distinguishing between a first breathing state of a first person and a breathing state of a second person.
35. A method as claimed in claim 26 comprising a step (c) of indicating when a deviation has been detected.
- 30 36. A method of monitoring breaths as claimed in claim 26, using a breath monitoring device as claimed in claim 1.